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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/647,071 | SWAIN ET AL. | |
| | Examiner | Art Unit | |
| | Amber D. Steele | 1639 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *125,126,128,129, and 131-140* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *125, 126, 128, 129, and 131-140* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/9/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 9, 2007 has been entered.

### *Status of the Claims*

2. Claims 1-99, 105-108, and 110 were canceled, claims 101-103 and 109 were amended, and new claims 111-124 were added in the amendment to the claims received on June 1, 2006.

The amendment to the claims received on February 16, 2007 amended claims 100-101, 118; canceled claims 102, 114-116; and added new claims 125-140.

The amendment to the claims received on October 9, 2007 canceled claims 100-101, 103-104, 109, 111-113, 117-124, 127, and 130 and amended claims 125 and 129.

Claims 125-126, 128-129, and 131-140 are currently pending and under consideration.

### *Election/Restrictions*

3. Applicants elected with traverse Group I (previous claims 100-104) in the reply filed on June 1, 2006. The traversal was on the ground(s) that a serious burden to search Groups I and III did not exist. The traversal was found persuasive. Therefore, the restriction between Groups I and III (i.e. previous claim 109) was withdrawn. However, applicants did not traverse the restriction between Group I and Groups II or IV. The restriction was made final in the Office action mailed on August 17, 2006.

***Priority***

4. The present application claims status as a CON of 10/115,580 filed April 1, 2002 which is a CON of 09/882,803 filed June 14, 2001 which is a CON of 09/257,821 filed February 25, 1999 which is a CON of 08/720,487 filed September 30, 1996 (now U.S. Patent 5,876,727) which is a CIP of 08/563,673 filed November 28, 1995 (now U.S. Patent 5,760,184) which is a CIP of 08/414,971 filed March 31, 1995.

5. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 08/414,971, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. Application No. 08/414,971 does not disclose nicotine, nicotine derivatives (i.e. nicotine metabolites of present Figure 19, nicotine-1'-N-oxide, trans-3'-hydroxycotinine, or nicotine glucuronide), nicotine derivative salts, or nicotine salts. In addition, application No. 08/414,971 does not disclose branches CJ 1.3 or CJ 11.

The disclosure of the prior-filed application, Application No. 08/563,673, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. Application No. 08/563,673 (U.S. Patent 5,760,184 does not disclose nicotine derivatives (i.e. nicotine metabolites of present Figure 19, nicotine-1'-N-oxide, trans-3'-hydroxycotinine, or nicotine glucuronide), nicotine derivative salts, or nicotine salts. In addition, application No. 08/563,673 does not disclose branches CJ 1.3 or CJ 11.

Therefore, the priority date for the present claim limitations of nicotine derivatives, nicotine salts, nicotine derivative salts, CJ 1.3, and CJ 11 is September 30, 1996 (i.e. filing date of U.S. application 08/720,487 which is now U.S. Patent 5,876,727). The priority date for the claim limitation of nicotine is November 28, 1995 (i.e. filing date of U.S. application 08/563,673 which is now U.S. Patent 5,760,184).

***Arguments and Response***

6. Applicants allege that U.S. application 08/414,971 and U.S. application 08/563,673 provide support for present claims 125-126, 128-129, and 131-140. However, neither U.S. application 08/414,971 nor U.S. application 08/563,673 disclose nicotine derivative, nicotine derivative salts, or nicotine salts as recited in independent claim 125.

***Information Disclosure Statement***

7. The information disclosure statement (IDS) submitted on October 9, 2007 is being considered by the examiner. Please note: only the abstract of WO 96/10179 is being considered (i.e. English translation of French abstract).

***Invention as Claimed***

8. A hapten-carrier conjugate comprising at least one hapten which is nicotine, a nicotine derivative, or a salt thereof and at least one carrier which is a bacterial toxin and wherein the hapten and the carrier are linked by a branch selected from the group of chemical moieties CJ 0 – CJ 11 wherein CJ 0 is carrier only and variations thereof.

Please note: claims 137-138 are considered intended use claims (i.e. suitable for parenteral, oral, dermal, or topical administration). Please refer to MPEP § 2106 which reads: "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim: (A) statements of intended use or field of use".

**Withdrawn Objection**

9. The objection of claims 100-101, 103-104, 109, 111-113, and 117-140 regarding the recitation of FIG. 2b in the claims is withdrawn in view of the amendments to the claims received on October 9, 2007.

**Withdrawn Rejections**

10. The rejection of claims 125-140 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention regarding a hapten derived from nicotine wherein the hapten is nicotine is withdrawn in view of the claim amendments received on October 9, 2007.

11. The rejection of claims 100, 103, 111, 125, and 127 under 35 U.S.C. 102(b) as being anticipated by Walling et al. U.S. Patent 5,164,504 issued November 17, 1992 is withdrawn in view of the amendments to the claims received on October 9, 2007 (i.e. bacterial toxin carrier).

12. The rejection of claims 125-126, 128-129, 131-132, and 136-140 under 35 U.S.C. 103(a) as being unpatentable over Walling et al. U.S. Patent 5,164,504, Holmgren et al. Am. J. Trop. Med. Hyg. 50(5) suppl.: 42-54, 1994 (provided by applicants in IDS), and Illum WO 94/27576 published December 8, 1994 is withdrawn upon further consideration and in view of applicants arguments.

13. The provisional rejection of claims 100-101, 103-104, 109, 111-113, and 117-140 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 43-45, 47-50, 52-54, 56-65, and 74-82 of copending Application Nos. 11/066,718; 11/472,216; 11/472,217; 11/472,218; 11/472,219; 11/472,222; and 11/472,223 are withdrawn in view of the amendments to the claims received for U.S. applications 11/066,718; 11/472,216; 11/472,217; 11/472,218; 11/472,219; 11/472,222; and 11/472,223.

**New Objections**

***Claim Objections***

14. Claims 125-126, 128-129, and 131-140 are objected to because of the following informalities: independent claim 125 recites Markush groups in an improper format (i.e. from the group consisting of: A, B, **or** C; from the group consisting of: A, B, C; see CJ 0 - CJ 11 and Q limitations). Appropriate correction is required. When materials recited in a claim are so related

as to constitute a proper Markush group, they may be recited in the conventional manner, or alternatively. For example, if "wherein R is a material selected from the group consisting of A, B, C **and** D" is a proper limitation, then "wherein R is A, B, C **or** D" shall also be considered proper (emphasis added; please refer to MPEP § 2173.05 (h).

## New Rejections

### *Claim Rejections - 35 USC § 112*

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 125-126, 128-129, and 131-140 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have not provided support for the new limitation "salt thereof" (i.e. nicotine salt or nicotine derivative salt; please refer to the response received on October 9, 2007, page 5, second and third paragraphs). Please refer to MPEP § 2163.06 which states that applicants should specifically point out support for any amendments made to the disclosure. While cocaine salts are disclosed on pages 10, 40, and 76 of the specification, the specification is silent regarding nicotine salts or nicotine derivative salts. It is also noted that nicotine salts and nicotine derivative salts encompass a broad genus of molecules.

The Federal Circuit stated that applicants comply with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams,

formulas, etc., that set forth the claimed invention." *Regents of the Univ. of Cal. v Eli Lilly & Co.*, 119 F.3d 1559, 1566, 43 USPQ2d 1398, 1404 (Fed. Cir. 1997) quoting *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966. As further noted by the Federal Circuit in *Lockwood*, 107 F.3d at 1571-72, 41 USPQ2d at 1966:

> Entitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed. It extends only to that which is disclosed. While the meaning of terms, phrases, or diagrams in a disclosure is to be explained or interpreted from the vantage point of one skilled in the art, all the limitations must appear in the specification. The question is not whether a claimed invention is an obvious variant of that which is disclosed in the specification. Rather, a prior application itself must describe an invention, and do so in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought.

See also, *In re Blaser*, 556 F.2d 534, 538, 194 USPQ 122, 125 (CCPA 1977); *In re Winkhaus*, 527 F.2d 637, 640, 188 USPQ 129, 131 (CCPA 1975); and *Ruschig*, 379 F.2d at 995, 154 USPQ at 123.

17. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

18. Claims 125-126, 128-129, and 131-140 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. One of skill in the art would not be able to determine the scope of the presently claimed invention.

Independent claim 125 recites the following limitations: at line 4, "at least one carrier which is a bacterial toxin" and at the last three lines, "Q is selected from the group consisting of: a protein or peptide carrier, modified protein or peptide carrier, or another branch identified by its "CJ" reference number". Thus, it is not clear from the claim limitations if the bacterial toxin carrier is Q or if Q is a second carrier (i.e. does the claim require "at least one carrier" or two

carriers). Further exacerbating the indefinite nature of the claim is the recitation at lines 5-6 that "said hapten and said carrier" (i.e. bacterial toxin carrier) "are linked by a branch selected from the group of chemical moieties identified by CJ reference number consisting of:" CJ 0 to CJ 11 wherein CJ 0 - CJ 1.2, CJ 2 - CJ 2.1, CJ 3 - CJ 8.1, and CJ 10 - CJ 11 recite Q in the formula. Therefore, do the hapten-carrier conjugates of independent claim 125 have the formula hapten-CJ branch-carrier wherein Q and the bacterial toxin carrier are the same or hapten-CJ branch-carrier-carrier wherein the first carrier is Q and the second carrier is the bacterial toxin carrier? Moreover, if Q and the bacterial toxin carrier are the same then the claim recites a narrow limitation (i.e. bacterial toxin carrier) followed by a broad limitation (i.e. protein or peptide carrier or modified protein or peptide carrier) which results in an indefinite claim scope.

***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 125-126, 128-129, 131-132, and 136-140 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walling et al. U.S. Patent 5,164,504 issued November 17, 1992 and Glenn et al. U.S. Patent 5,980,898 with an effective filing date of November 14, 1996.

For present claims 125-126 and 137-138, Walling et al. teach nicotine, cotinine, and cotinine derivative (i.e. nicotine derivative/metabolite) hapten-carrier conjugates wherein the hapten is cotinine, trans-3'-cotinine, or cotinine-N-oxide, the carrier can be various proteins or peptides, and the carrier is covalently bound to the hapten via direct linkage (i.e. CJ 0),

$(CH_2)_2CONH$ (i.e. CJ 6 where n = 2), or as represented in Formula I (please refer to column 2) wherein X is a straight or branched chain, saturated or unsaturated, divalent radical which has from 1-10 carbon atoms and 1-2 hetero atoms selected from the group consisting of S, O, and NZ wherein Z is a $C_1$-$C_3$ alkyl group and Q is a functional group selected from –COOH, -$NH_2$, -$C(O)NHNH_2$, -O(CO)Cl, -CHO, -NCS, or –NCO (please refer to the entire specification particularly the abstract; Formulas I, IV, V, VI, , VII, VIII, IX, X, XI, XII, XV, and XVI; columns 1-8; Examples 1-8; claims 1-6; and Table 1). In addition, Walling et al. teach utilizing S, O, and NH molecules in the branches joining the hapten and the carrier (please refer to columns 2-6). Furthermore, Walling et al. teach utilizing the hapten-carrier conjugates as immugens and eliciting immune responses in various animals (please refer to column 6).

Regarding the limitations of claim 126 (i.e. n is from 3 to 20), MPEP § 2144.09 states the following: "homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -$CH_2$- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978). Thus, the $(CH_2)_2CONH$ branch taught by Walling et al. (i.e. CJ 6 where n = 2; please refer to Examples 6-7; Formulas XV and XVI; and columns 2-6) is considered an obvious variant of CJ 6 where n = 3-20 (i.e. present claim 126).

The intended use of present claims 137-138 (i.e. suitable for parenternal, oral, dermal, or topical administration) does not alter the structure of the presently claimed hapten-carrier conjugate (please refer to MPEP § 2106). In addition, the Office does not have the facilities and resources to provide the factual evidence needed in order to determine if the nicotine derivative

hapten-carrier conjugates taught by Walling et al. differ from a nicotine derivative hapten-carrier conjugate that is suitable for parenternal, oral, dermal, or topical administration as presently claimed (i.e. present claims 137-138). In the absence of evidence to the contrary, the burden is upon the applicant to prove that the nicotine derivative hapten-carrier conjugates as claimed are different from the ones taught by the prior art and to establish the patentable differences. See *in re Best* 562F.2d 1252, 195 U. S. P. Q. 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1922(PTO Bd.Pat. App. & Int. 1989).

For present claims 131, 136, and 139, Walling et al. teach various excipients and "auxiliary agents" (i.e. pharmaceutically acceptable excipient; please refer to Examples 1-3 and 6-8).

For present claims 132 and 140, Walling et al. teach pristine (i.e. adjuvant; please refer to column 7, lines 24-31).

However, Walling et al. does not teach bacterial toxin carriers including *Pseudomonas* exotoxin or more than one hapten coupled to the carrier.

For present claims 125, 129, 131-132, 136, 138, and 139-140, Glenn et al. teach a transcutaneous immunization system comprising antigen/hapten, adjuvant, and/or carriers (i.e. antigens, adjuvants, and carriers can be the same or different molecules) wherein the hapten/adjuvant/carrier is preferably ADP-ribosylating exotoxins including *Pseudomonas* exotoxin and the composition can also contain hydrating agents, penetration enhancers, pharmaceutically acceptable additives, diluents, binders, stabilizers, preservatives, colorings, buffers, liposomes, etc. (i.e. pharmaceutically acceptable excipient, auxiliary agent, and

supplementary active compound; please refer to the entire specification particularly the abstract; columns 1, 3-5, and 6-10; and Examples columns 16-29).

For present claim 128, Glenn et al. teach that the antigen may comprise a single immunogenic epitope or a multiplicity of immunogenic epitopes (i.e. more than one hapten; please refer to column 4, lines 29-37; column 8, lines 33-41).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the nicotine derivative hapten-carrier conjugates taught by Walling et al. with the specific carrier (i.e. *Pseudomonas* exotoxin) and multiple haptens taught by Glenn et al.

One having ordinary skill in the art would have been motivated to do this because Glenn et al. teach that *Pseudomonas* exotoxin and multiple haptens elicit a strong immune response (please refer to column 1, lines 15-28; column 2, lines 39-67; column 3, lines 1-20; and Figures 1A-2D).

One of ordinary skill in the art would have had a reasonable expectation of success in the modification of the nicotine derivative hapten-carrier conjugates taught by Walling et al. with the specific carrier (i.e. *Pseudomonas* exotoxin) and multiple haptens taught by Glenn et al. because of the results obtained by Glenn et al. (please refer to Figures 1A-2D).

Therefore, the modification of the nicotine derivative hapten-carrier conjugates taught by Walling et al. with the specific carrier (i.e. *Pseudomonas* exotoxin) and multiple haptens taught by Glenn et al. render the instant claims *prima facie* obvious.

21. Claims 133-135 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walling et al. U.S. Patent 5,164,504 issued November 17, 1992 and Glenn et al. U.S. Patent 5,980,898 with an effective filing date of November 14, 1996 as applied to claims 125-126, 128-129, 131-132, and 136-140 above, and further in view of Layton et al., Factors influencing the immunogenicity of the haptenic drug chlorhexidine in mice, Immunology 59: 459-465, 1986.

Walling et al. and Glenn et al. teach nicotine derivative hapten-bacterial toxin conjugates (see section 20 above).

However, neither Walling et al. nor Glenn et al. teach the specific adjuvant of alum or more specifically aluminum hydroxide.

For present claims 133-135, Layton et al. teach haptens, carriers, and adjuvants including alum and, specifically, aluminum hydroxide (please refer to the entire reference particularly the Summary, Introduction, and the Reagents section of the Materials and Methods).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the nicotine derivative hapten-bacterial toxin conjugates taught by Walling et al. and Glenn et al. with the alum adjuvant taught by Layton et al.

One having ordinary skill in the art would have been motivated to do this because Layton et al. teach that the carrier can be immunogenic and/or an adjuvant can be utilized to enhance the immune response of the hapten (please refer to the Introduction; page 461, The effects of adjuvants on the immunogenicity of chlorhexidine; Table 2; and Figures 2-5).

One of ordinary skill in the art would have had a reasonable expectation of success in the modification of the nicotine derivative hapten-bacterial toxin conjugates taught by Walling et al.

and Glenn et al. with the alum adjuvant taught by Layton et al. because of the results (i.e. immune response) provided by Layton et al. (please refer to Table 2 and Figures 2-5).

Therefore, the modification of the nicotine derivative hapten-bacterial toxin conjugates taught by Walling et al. and Glenn et al. with the alum adjuvant taught by Layton et al. render the instant claims *prima facie* obvious.

**Maintained Rejections**

22. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. Please note: the rejection has been altered to reflect the claim amendments received on October 9, 2007.

***Double Patenting***

23. Claims 125-126, 128, and 131-140 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 4-5, 8-12, and 17-18 of U.S. Patent No. 5,876,727. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the presently claimed inventions and the inventions as claimed in U.S. Patent No. 5,876,727 claim nicotine or nicotine-derived haptens conjugated to a carrier and pharmaceutical compositions of the hapten-carrier.

For present claim 125, U.S. Patent No. 5,876,727 claims a nicotine hapten-carrier conjugate comprising the structure shown in Figures 17b and 18 (e.g. nicotine derivative hapten wherein chemical moieties may be at positions A-F and not simply utilized as a linker between the hapten and the carrier) and side chains (e.g. branch) of CJ 0, 1, 1.1, 1.2, 1.3, 2, 2.1, 2.2, 2.3, 3, 3.1, 4, 4.1, 5, 5.1, 6, 7, 7.1, 8, 8.1, 9, 10, and 11 (where the CJ structures are claimed, n = an integer, and Q is a carrier) and a T-cell epitope carrier (please refer to claim 1). In addition, U.S.

Patent 5,876,727 claims carriers including peptides, proteins, cholera toxin, diptheria toxin, tetanus toxoid, and pertussis toxin (i.e. bacterial toxins; please refer to claim 1).

For present claim 126, U.S. Patent 5,876,727 claims n is from 3 to 20 (please refer to claim 1).

For present claim 128, U.S. Patent 5,876,727 claims at least two haptens coupled to the carrier (e.g. greater than one hapten; please refer to claim 2).

For present claims 131-132 and 140, U.S. Patent 5,876,727 claims a pharmaceutically acceptable carrier, an aqueous solution at a physiologically acceptable pH, and adjuvants (e.g. pharmaceutically acceptable excipient; please refer to claims 8-11).

For present claim 133-135, U.S. Patent 5,876,727 claims alum (i.e. aluminum hydroxide), MF59, or RIBI adjuvants (please refer to claims 9-10).

For present claims 136 and 139, U.S. Patent 5,876,727 claims pharmaceutically acceptable carriers, adjuvants, alum, MF59, RIBI, and aqueous solutions (e.g. auxiliary agent or supplementary active compound; please refer to claims 8-11).

For present claim 137, U.S. Patent 5,876,727 claims parenternal administration to a mammal (e.g. human; please refer to claims 12 and 17).

For present claim 138, U.S. Patent 5,876,727 claims oral administration (please refer to claims 12 and 18).

Therefore, the claims of U.S. Patent 5,876,727 render the presently claimed invention *prima facie* obvious.

***Arguments and Response***

24. Applicants' arguments directed to the rejection of present claims 125-126, 128, and 131-140 as being unpatentable on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 4-5, 8-12, and 17-18 of U.S. Patent No. 5,876,727 were considered but are not persuasive for the following reasons.

Applicants indicate that they will submit a terminal disclaimer.

Applicants' arguments are not convincing since a terminal disclaimer was not received.

25. Claims 125-126, 129, and 131-140 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 88-127 of copending Application No. 11/472,215. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the presently claimed inventions and the inventions claimed in U.S. Patent application 11/472,215 claim nicotine hapten-carrier conjugates and pharmaceutical compositions.

For present claims 125 and 129, U.S. application 11/472,215 claim a nicotine hapten or nicotine derivative hapten-carrier conjugate comprising the structure shown in Fig. 17b (e.g. nicotine derivative hapten) and branches of CJ 0, 1, 1.1, 1.2, 1.3, 2, 2.1, 2.2, 2.3, 3, 3.1, 4, 4.1, 5, 5.1, 6, 7, 7.1, 8, 8.1, 9, 10, and 11 wherein Y (e.g. for the CJ structures) is S, O, or NH (where the CJ structures are claimed, n = an integer, and Q is a carrier) and a T-cell epitope carrier (please refer to claims 88 and 91). In addition, U.S. application 11/472,215 claims carriers including proteins, peptides, multiantigenic peptides, bacterial toxins, cholera toxin, diptheria

toxin, tetanus toxoid, pertussis toxin, shiga toxin, and pseudomonas endotoxin (please refer to claims 94-99).

For present claim 126, U.S. application 11/472,215 claim n is from 3 to 20 (please refer to claims 89-90 and 92-93).

For present claims 131 and 139, U.S. application 11/472,215 claim a pharmaceutically acceptable carrier (i.e. excipient; please refer to claims 100-102).

For present claims 132 and 140, U.S. application 11/472,215 claim adjuvants (please refer to claims 103-108).

For present claim 133, U.S. application 11/472,215 claim alum, MF59, or RIBI adjuvants (please refer to claims 106-108).

For present claim 134-135, U.S. application 11/472,215 claim aluminum hydroxide or aluminum phosphate (please refer to claim 108).

For present claim 136, U.S. application 11/472,215 claim pharmaceutically acceptable carriers, adjuvants, alum, MF59, RIBI, and aqueous solutions (e.g. auxiliary agent or supplementary active compound; please refer to claims 100-108).

For present claim 137, U.S. application 11/472,215 claim parenteral administration to a mammal (e.g. human; please refer to claims 109-127).

For present claim 138, U.S. application 11/472,215 claim oral administration (please refer to claims 109-111).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Arguments and Response***

26. Applicants' arguments directed to the rejection of present claims 125-126, 129, and 131-140 as being unpatentable on the ground of nonstatutory obviousness-type double patenting (provisional) as being unpatentable over claims 88-127 of copending Application No. 11/472,215 were considered but are not persuasive for the following reasons.

Applicants indicate that they will submit a terminal disclaimer.

Applicants' arguments are not convincing since a terminal disclaimer was not received.

27. Claims 125, 128-129, and 131-140 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 88-118 of copending Application No. 11/472,220. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the presently claimed inventions and the inventions claimed in U.S. Patent application 11/472,220 claim nicotine hapten or nicotine derivative-carrier conjugates and pharmaceutical compositions.

For present claims 125 and 129, U.S. application 11/472,220 claim a nicotine hapten or nicotine derivative hapten-carrier conjugate (i.e. branch CJ 0; please refer to claims 88-89). In addition, U.S. application 11/472,220 claims carriers of proteins, peptides, bacterial toxins, cholera toxin, diptheria toxin, tetanus toxoid, pertussis toxin, shiga toxin, and pseudomonas endotoxin (please refer to claims 104 and 106-108).

For present claim 128, U.S. application 11/472,220 claim 1-70 haptens coupled to the carrier (please refer to claim 90).

For present claims 131 and 139, U.S. application 11/472,220 claim a pharmaceutically acceptable carrier (i.e. excipient; please refer to claim 91).

For present claims 132 and 140, U.S. application 11/472,220 claim adjuvants (please refer to claims 92-94).

For present claim 133, U.S. application 11/472,220 claim alum, MF59, or RIBI adjuvants (please refer to claims 93-94).

For present claim 134-135, U.S. application 11/472,220 claim aluminum hydroxide or aluminum phosphate (please refer to claim 94).

For present claim 136, U.S. application 11/472,220 claim pharmaceutically acceptable carriers, adjuvants, alum, MF59, RIBI, and aqueous solutions (e.g. auxiliary agent or supplementary active compound; please refer to claims 91-94).

For present claim 137, U.S. application 11/472,220 claim parenteral administration to a mammal (e.g. human; please refer to claims 99-103).

For present claim 138, U.S. application 11/472,220 claim oral administration (please refer to claim 99).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Arguments and Response***

28. Applicants' arguments directed to the rejection of present claims 100-101, 103-104, 109, 111-113, 117-140 as being unpatentable on the ground of nonstatutory obviousness-type double patenting (provisional) as being unpatentable over claims 43-45, 47-50, 52-54, 56-65, and 74-82 of copending Application Nos. 11/066,718; 11/472,215; 11/472,216; 11/472,217; 11/472,218;

11/472,219; 11/472,220; 11/472,222; and 11/472,223 were considered but are not persuasive for the following reasons.

Applicants indicate that they will submit a terminal disclaimer.

Applicants' arguments are not convincing since a terminal disclaimer was not received.

***Future Communications***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amber D. Steele whose telephone number is 571-272-5538. The examiner can normally be reached on Monday through Friday 9:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amber D. Steele/
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AU1639

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